

WHAT IS CLAIMED IS

1. A speech synthesizing method comprising:

(1) the extraction step of extracting a plurality of small speech segments from a speech waveform;

5 the prosody control step of processing the plurality of small speech segments to control prosody of the speech waveform while limiting processing for a selected small speech segment of the plurality of small speech segments; and

10 the synthesizing step of obtaining synthesized speech by using the speech waveform for which prosody control is performed in the prosody control step.

2. The method according to claim 1, wherein

15 the method further comprises the adding step of adding limitation information for inhibiting execution of predetermined processing for the selected small speech segment, and

20 in the prosody control step, execution of the predetermined processing for a small speech segment to which the limitation information is added is inhibited in executing the prosody control.

3. The method according to claim 2, wherein

the predetermined processing includes deletion of a small speech segment, and

25 in the prosody control step, deletion of the small speech segment to which the limitation information is added is inhibited when reduction of an

utterance time of synthesized speech is performed as the prosody control.

4. The method according to claim 2, wherein the predetermined processing includes repetition of a small speech segment, and

in the prosody control step, repetition of a small speech segment to which the limitation information is added is inhibited when prolongation of a time of synthesized speech is performed as the prosody control.

5. The method according to claim 2, wherein the predetermined processing includes a change in an interval of a small speech segment, and

in the prosody control step, a change in an interval of a small speech segment to which the limitation information is added is inhibited when making a change in a fundamental frequency of synthesized speech as the prosody control.

6. The method according to claim 1, wherein storage means in which a plurality of window functions arranged along a time axis and limitation information corresponding to at least one of the window functions are stored is used,

in the extraction step, small speech segments are extracted from a speech waveform by using the plurality of window functions, and

in the prosody control step, when limitation

information is made to correspond to a window function,
a small speech segment extracted by using the window
function is selected and the limitation is imposed on
the small speech segment on the basis of the limitation
5 information.

7. The method according to claim 2, wherein in the
adding step, the limitation information is added to a
small speech segment corresponding to a specific
position on a speech waveform.

10 8. The method according to claim 7, wherein the
specific position includes a boundary between a voiced
sound portion and an unvoiced sound portion.

9. The method according to claim 7, wherein the
specific position includes a phoneme boundary.

15 10. The method according to claim 7, wherein the
specific position is a predetermined range including a
plosive, and the predetermined range includes a
plurality of small speech segments.

(2) 11. A speech synthesizing apparatus comprising:
20 extraction means for extracting a plurality of
small speech segments from a speech waveform;
prosody control means for processing the
plurality of small speech segments to control prosody
of the speech waveform while limiting processing for a
25 selected small speech segment of the plurality of small
speech segments; and
synthesizing means for obtaining synthesized

speech by using the speech waveform for which prosody control is performed by said prosody control means.

12. The apparatus according to claim 11, wherein the apparatus further comprises adding means for
5 adding limitation information for inhibiting execution of predetermined processing for the selected small speech segment, and

said prosody control means inhibits execution of the predetermined processing for a small speech segment
10 to which the limitation information is added in executing the prosody control.

13. The apparatus according to claim 12, wherein the predetermined processing includes deletion of a small speech segment, and

15 said prosody control means inhibits deletion of the small speech segment to which the limitation information is added when reduction of an utterance time of synthesized speech is performed as the prosody control.

20 14. The apparatus according to claim 12, wherein the predetermined processing includes repetition of a small speech segment, and

said prosody control means inhibits repetition of a small speech segment to which the limitation
25 information is added when prolongation of a time of synthesized speech is performed as the prosody control.

15. The apparatus according to claim 12, wherein

the predetermined processing includes a change in an interval of a small speech segment, and

said prosody control means inhibits a change in an interval of a small speech segment to which the
5 limitation information is added when making a change in a fundamental frequency of synthesized speech as the prosody control.

16. The apparatus according to claim 11, wherein
storage means in which a plurality of window
10 functions arranged along a time axis and limitation information corresponding to at least one of the window functions are stored is used,

said extraction means extracts small speech segments from a speech waveform by using the plurality
15 of window functions, and

said prosody control means, when limitation information is made to correspond to a window function, selects a small speech segment extracted by using the window function and imposes the limitation on the basis
20 of the limitation information.

17. The apparatus according to claim 12, wherein said adding means adds the limitation information to a small speech segment corresponding to a specific position on a speech waveform.

25 18. The apparatus according to claim 17, wherein the specific position includes a boundary between a voiced sound portion and an unvoiced sound portion.

19. The apparatus according to claim 17, wherein the specific position includes a phoneme boundary.

20. The apparatus according to claim 17, wherein the specific position is a predetermined range including a
5 plosive, and the predetermined range includes a plurality of small speech segments.

21. A control program for making a computer implement the speech synthesizing method defined in claim 1.

22. A storage medium storing a control program for
10 making a computer implement the speech synthesizing method defined in claim 1.

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